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BUREAU OF BIOLOGICAL SURVEY

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FIELD DIARY

Mr. Vernon Bailey
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Period, April 5-8 to 1929

Virginia
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April 5, 1929

Left Washington D.C. for
Hot Springs, Virginia to study
the deer problem for the State
Game department.

On C & O. Ry. through
Culpeper, Charlottesville,
Staunton, and Covington,
then up to Hot Springs and by
auto across to Warm Springs
where we arrived at 12
midnight and were taken
to Hotel Warm Springs Inn by
the Game warden Wm. A. Hite
and District warden R. L. Seay

Along route from Washington
to Stanton the red bud was in
full flower until we crossed the
first range of mountains.
Apple blossoms were just coming
out and the dogwood were a
gumily white. Peach orchards
were past blossoming and the
trees showed much green new
foliage.

At Stanton it was too dark
to see except a tiny bit of white
to the apple orchards.

on 20 March

April 6, At Warm Springs I am
we had a comfortable night
and woke up in a beautiful mountain
valley with steep hills running
around 500 or 600 feet above
us, a wooded country with
little farmed land in the valleys.

The woods are mostly beech with
a little green on willows and elms.
Amelanchier in blossom but we
had not had a dogwood out. A few little
peach trees in flower but apple trees
not yet out.

All transition zone except on
cold slopes and gulches where
hemlock & Rhododendron indicate
Canadian. Only a trace of Arctic
on low warm slopes where Sycamore,
Tulip,

Birds Warm Springs, Va.

April 6 -

Meagris	a few
Bonasa	com
Colinus	a few
Coturnix	1 bird
Dendroica	"
Sphyrapicus	" sun, com
Colaptes	com.
Corvus americanus	1 - com
Grosbeak, purple,	com
Strewnella	"
Cardinalis	2, a few
Fringilla	1, 1, com.
Poecile	com
Junco	obs
Spiro's sociabilis	com -
Wilson's	"
Regulus calendula	2, 3,
Carolina wren	3, others
Penthestes	2

Parus inornatus	1
Wren philadelphicus?	2, 1,
Merula nigronotata	com
Sialia sialis	"
Phoebe	com. nesting
Starling	2 at Monterey April 7, com
English sparrow	com " "
Cardinal	1
Kingfisher	3
Cowbirds	4
Redwings	2
Mourning doves	3
Bobwhite	1
Sparrow hawk	2
Turkey buzzards	4

Trees & bushes, Wrentham, Mass.

April 6 -

<i>Pinus strobus</i>	abn
" <i>engelmanni</i>	"
" <i>rigida</i>	"
" <i>rostrata</i> <i>echinata</i>	"
" <i>virginiana</i>	" low down
<i>Zelkova serrulata</i>	" on N.E. slopes.

Buceros rubra

" <i>alba</i>
" <i>placata</i> <i>digitalis</i>
" <i>prinoides</i>
" <i>semirecta</i> <i>varia</i>
" Turkey?
" <i>coccinea</i>

Acer saccharum

" *saccharinum*

" *rubrum*

" *spreatum*

" *peninsulare*

Ulmus americana

vernonia *pubescens*

Hicoria alba, shagbark

Carya ovata, shellbark

" *laciniosa*

" *cordifolia*, pignut

Juglans nigra *cinerascens*

Castanea dentata, *nigra*

Nyssa sylvatica, Bladegum

Robinia pseudoacacia

Ostrya virginiana

Pyrus, *Malus coronaria*, crabapple

Citrus,

Prunus pensylvanica, black cherry

Fraxinus

Salix 3.

Platina, a little low down

Fagus " " "

Aesculus x caroliniana

" *caroliniana*

Sassafras a little low down.

Liquidambar " "

Cornus florida " "

Alnus virga

Bengoin a little

Vaccinium *hirtum*

Ilex

Hepaticas

Lanceolata - *Merulius pilosus*

Vaccinium

Rubus

Vitis

Smilax

Beech a little low down

Kalmia latifolia

Rhododendron maximum

Agalea - a little

Rhus hispida

" *glabra*

Sambucus

Sassafras, a little

Black birch

Basswood

Gaultheria

Cerbutus

Brodroot

Hepaticas

Viola

Cowchip

Tritillium

Mr. Gillett says Warm Springs is about 2500 feet, his place is 2200 feet, Bald Mountain near Hot Springs is 4300 feet and one other peak 4000 feet.

In AM of April 6 we went to the game refuge on Rock Creek ridge ^{north} west of Warm Springs about 6 miles from Warm Springs. It was about 5000 acres and is partly fenced.

We found lots of deer tracks all along the roads and trails and I estimate tracks of 100 to 200 deer seen. Mr. Hill estimates 1500 deer to Bath Co. which seems to me a conservative estimate.

Bath Co. Va., April 4 - 1929.

Deer	1500
Fox squirrel	co
Gray squirrel	"
Bluetit squirrel	a few
Red squirrel	1
Chipping Woodchuck	—
Porcupine	a few
Skunks	co
Woodchucks	co
"	"
Squirrels	co
"	"
Porcupines	co.
Coat-tail	April 9.
Bear	a few
Porcupines	"
Gila gull	"
Magpies	"
Wrens	very few
Wiselet	a few

In P.M. Went north 10 miles to place of M. J. Ed. Gillett on Rocky Run, a branch of Judson River that joins the James further down.

Found a fine wooden house with an interesting couple, who took the best of care of us with all the comforts of home, including a big fireplace and lots of wood.

Saw lots of wildcat tracks and signs, the signs made up of wool and deer hair and rabbit fur. There are probably 200 and maybe 400 bobcats in the Co. and if these take 10 deer each in a year it would take about all.

There are lots of gray foxes too and a few wild turkeys and lots of ruffed grouse. Here is a big problem.

Otter - a few long ago
Lynx trapped, com. primitively
Lynx " 50 caught last year¹⁹²⁷
Bobcat " "
Porcupine " "
Wolverine a few red pts.

April 7 Sunday, at Gillitts

2 deer in yard
Eat laurel, Rhododendron, blackberry
Benzoin, with hazel, alder, red osier,
Red elm, -

Reposed willow, Spearanora.

Mr. Gillitt says a year ago last fall
(1927) the trappers caught 50 gray foxes
in this valley, along the Jackson River
up Jackson River to head of
Monterey at 3300 feet. county seat of
Highland Co.

Narrow valley with good little farms,
blue grass and stock. Mountains both sides
Mainly Transition zone.

Canadians on cold slopes as
shown by hemlock + Rhododendron, white
pine and *Pinus strobus*.

From Monterey road to top of ridge
at about 3700 feet where we look down
over Croft Bottoms, a fine high
up farming country.

at west of the valley the main range of the Alleghany Mts.

No green foliage in woods but grass getting well up in open great Kentucky bluegrass country.

Lunch at Monterey

Then east to Bull Pasture at Cowpasture valley and over the Stanabrook Ridge at W.C. Dowell's battle ground & down to Calfpasture Creek & down valley to Deepfield & then down to Thompson Creek, three over Warm Springs Mountain and down to Warm Springs at 6:30 P.M.

Covered about 100 miles over fair roads most quarry.

Very warm and summerlike.

April 8. Left Waynesville at 9 AM and came back over the Neesmepings mountain and up to lookout fire station, then down to eastern Thompson Creek, then over to Cowpasture River to Blowing Cave near the Windy Cove Church founded in 1749, then across Sweet Run and Lick Run, then over the top of the ridge and down to Millboro on the railroad.

In the lowest part of Cowpasture River, sand more red bed, big tuliptrees and a strong trace of Carolinian on warm slopes. Took train at 3:17 P.M. for home, due 10:40 P.M. Very warm and dry. like summer.

Over mountains at Mill斯ars and
then all down grade to big open
farming & orchard valley at Swoope.
Strong element of Carolinian zone on slopes.

Staunton in bottom of valley.
at 1395 feet.

Warrenball, Carolinian zone on
warm slopes.

Afton 1379, top of front range.
all Carolinian below.

Bath & Highland Cos., Pa. April 4-8, 1927

1 rough

Bison bison pennsylvanicus.

Buffalo are not remembered by the oldest inhabitants but are well known by tradition in the valleys of Bullpasture, Cowpasture and Calfpasture creeks which are said to owe their names to these animals a hundred years ago or more.

The country is ~~too~~ mostly too rough and steep and heavily timbered and probably there were never many buffaloes anywhere in this high region, nor could they possibly last long before the sinks of the early white settlers.

Cervus canadensis

Elk were known to be all through this region but they must have disappeared at an early day, for Mr. Pitt's whose father was a hunter here nearly a hundred years ago never heard of any elk being seen or killed by any of the old men he knows.

The old Windy Creek Church on Cowpasture River, two miles north of Millboro was built in 1749 which shows how far back the settlements go in these hills.

The country is fine for elk but most of their time would be spent in the valley fields and orchards and gardens and they could not be controlled or tolerated in any numbers.

Odocoileus virginianus

Deer are still fairly well represented in Bath and Highland Counties but not in half the numbers there should be. In Bath Co. Mr. Wm. A. Hite, the local woodsman very familiar with conditions, estimates 1500 deer and from the tracks and signs seen I should say this was a very conservative estimate.

In Highland Co. there may be as many but I should say certainly 1000 deer would be a safe guess.

Food and range are equally abundant and favorable for deer in the two counties which seem to be considered the best in the state for deer. They are largely mountainous

2, and lie between 2000 and 4000 feet in elevation. They are made up of various mountain ranges with narrow stream valleys between and the valley bottoms all in grass and clover but the ridges, hills and mountains are forest, mostly second growth from cutting a heavy in years past. All of the nuclear land is ideal deer pasture said to be about 82 percent of the country.

Mostly deer & fawn tracks seen on the Back Creek game refuge 10 miles south of Warm Springs but the old bucks are said to keep along the crests of the ridges most of the time.

Deer food is abundant and ideal for twice and probably four times the number of deer at present on the range and not more than half of the good range is occupied at all.

3. At least 6 species of oaks bear acorns, some of them every year, and generally in such abundance that acorns still lie on the ground in spring. The chestnuts still bear a lot of fruits but all are dying out. There are lots of hazel nuts and small seeds & berries for deer while the herbage on almost every kind of bush and shrub and tree sprout seems inexhaustable. The great abundance of blueberry bushes of at least 3 or 4 species, sassafrass, maple of 5 species, chestnut, willow, alder, wintergreen, arbutus, laurel and Rhododendron afford favorite haunts for winter, while the clovers and ~~gutcherus~~ are abundant summer food as well as the leaves and flowers and buds of a great number of shrubs.

4. At Mr. Gillett's place on Jackson River he has a buck and doe fawn in and always hungry because there is nothing green in their yard except grass which they will not touch. They were ravenous for the leaves of laurel and Rhododendron, the young leaves of blackberry, flowers of spirea, buds of maple and elder, but did not care for sycamore or mulberry twigs, not yet in leaf.

White clover grows abundantly on all old clearings or roads or fields not in use and a little red clover here and there. These are especially sought for evening night by the does and fawns. Dandelions are generally scarce where there are any deer and so is the wild violet, but in places the woods are full of two species of it.

5. In no place could we find a trace of over grazing corn in winter, and food supply need not be considered for many years.

Enemies are a serious menace to deer. In the Back Creek Game Refuge we saw fresh and old tracks of many bobcats and their droppings were seen ~~big~~ in abundance along the trails. In many cases these droppings contained deer hair, in others sheep's wool and in others rabbit fur.

From evidence noted I should say Bath Co. has 100 to 200 bobcats, and it would be strange if these did not average 10 deer or fawns apiece during the year. This is the most serious and immediate deer problem.

4. There are lots of gray foxes and a very few red foxes that may get a few fawns in summer but they are of much greater danger to wild turkeys and upland grouse & rabbits.

The sexes of deer need not cause any worry for 2 or 3 years yet as there have been but 3 years of hunting bucks only and the bachelors have taken more does than the hunters have bucks.

Hunting should be discontinued as much as possible to allow increase for spreading out and restocking. By all means restrict it to bucks for two years yet, then consider opening on any kind of deer. Limit the season and allow but one buck to a hunter.

7. Moving deer from places where abundant to places where there are few or none should be done as fast as possible. Trapping and moving deer without injuring or frightening them should be a practical part of game management.

Licenses - More funds are clearly needed for increasing the game and making better hunting and these funds might be obtained by increasing amount of resident license. This could well be done by dividing the license on deer, turkeys, small game, fishing and trapping. The non resident license of 25 dollars seems high enough to keep out undesirable hunters.

Introduction of deer is not necessary or desirable as the native stock is better adapted

8. Do we carry or release does any from outside, but if any are introduced they should be the larger does from northern New York or Michigan or Minnesota. The one doe in Mr. Gillett's yard is evidently the small, southern doe, probably from North or South Carolina stock.

Native stock has many advantages over any from outside and there is abundance here to replenish the whole range if well managed.

Sylvilagus transitionis

Two species of cottontails
undoubtedly occur here. The
big dark brown one high
up and in the brush and
woods is undoubtedly of
this species. Signs
were seen all through the
~~area~~ along the crests of
ridges clear up to the first
lookout on Warm Springs
mountain. It is a distinct
species and does not mix
with the common
cottontail of the valley
country.

Sylvilagus nuturus

Cottontails are common in all of the valleys and are a valuable game animal. Their greatest value is in their abundance and availability for every boy to hunt and get the training he needs for larger game and better marksmanship. The boy who can hit the head of a rabbit with his twenty two rifle will not cripple his deer when he grows up and he will not shoot at a guear and kill another hunter.

Sciurus niger neglectus

Fax squirrels are scarce but generally distributed over this region. There are not one where there should be a dozen to utilize the ample food supply of chestnuts, butternuts, hickory nuts, and bushels of acorns which still lie on the ground with sound sweet meats from last years crop. These squirrels are the finest small game animals we have and should be protected in ample numbers to stock this range. Hunters are their only enemies and they should be curbed.

The old hollow trees of the forest afford ideal homes and cover and the mountains should be a ~~panacea~~ for these splendid big squirrels.

Sciurus hudsonicus logaux

A few red squirrels are found over the mountains but so scarce that we have seen but one on the tips over two counties. The great abundance of pines and hemlock cones would furnish food for many of these squirrels besides all the nuts and acorns they could eat and they are one of the attractive forms of wild life of which this region is distressingly poor.

Zapus carolinensis nucanus

We saw several gray squirrels and they are said to be fairly common and a few blades among them. This would indicate the larger northern form rather than the Carolina gray squirrel and a better game animal.

There is ample food of the choicest nuts and acorns for a much larger squirrel population and the numerous old hollow trees afford the safest houses and breeding places. If the full value of such small game were half appreciated a more vigorous effort to protect these animals and keep their numbers up to the limit would be made.

Tamias striatus -

Chipmunks are common but not often seen. They are interesting little animals and generally harmless but are probably kept scarce by the numbers of wild house-cats running all through the woods.

Marmota monax

A few woodchucks were seen in some of the meadows and on the hillsides and occasionally a fresh hollow in the woods but in no place are the animals numerous enough to do any real damage and they do add an attractive element of wild life to the country that is of real value.

Neotoma floridana pennsylvanica

Woodrats are found in many of the caves, among the rocks and rarely around buildings. I saw tracks in the cave on Thompson Creek.

Rattus norvegicus

House rats are common and troublesome around buildings generally all through the mountainous country.

Peromyscus leucopus

These are probably the common woods mice of the region.

Microtus pennsylvanicus

Runways and burrows very found under grass in old fields but some of the mice taken or identified.

Microtus pictus scalptoides

A few burrows and ridges may have been of this species.

Microtus chrotaechus

Some of the ^{microtus} signs
may have been of this yellow
nosed vole but I could
get no evidence if so.
Still they should be searched
for.

Erethizon dabbii

I found no evidence of these
little red backed mice but saw
lots of places under the laurel
and Rhododendron and hemlocks
where I am sure I could
catch them.

Lixus ziphurus -

A few muskrats are said
to be found along the rivers and
creek banks in the mountain
valleys and near Stanton I saw
a muskrat sitting in a bunch of
water grass in the Creek.

was cougar

Many places still bear the names of Panther Ridge or Panther Rock and Panther Spring, and Mr. Hite says he has heard many stories of panthers hunted and killed, he thinks not later than 50 years ago. He showed me the Panther Rocks near the top a great ridge on the east side of Calipatria Valley. There seems no possibility that any of these big cats remain and it is probably better so.

Lynx rufus rufus

Bobcats are far too numerous here at the present time and their tracks and droppings are seen along many of the roads and trails in the mountains. I should estimate 100 to 200 of bobcats in each of the two counties. They have ideal covered dens in the numerous caves and hollow cliffs and boulders along the edges and seem to be little hunted or trapped.

On the Black Creek Game Reserve we saw numerous fresh and old tracks and dozens of droppings along the trail. Forty of these were made up entirely of deer hair, others of sheep wool and others of cattle hair.

It seems highly probable
that each fully grown boar
kills ten or a dozen does
and sows a year. They are
less likely to kill full grown
bucks but are especially
deterrent to sows in sows.
A good hunter with the
right kind of bait ought
to get most of the boars
in one of these counties in
a year and one winter to pay
his salary of \$100 a month from
cat and fox skins, both of
which should be kept down
to the lowest possible number
to protect both the deer and
wild turkeys. In summer
the pen would be worthless
but soon we afford to let
these animals feed on venison
even for the rest of this summer.

Canis latrans

Wolves were common in these mountains a hundred years ago and a few Mr. H. thinks up to 50 years ago. Fortunately they are all gone but probably our dogs do almost as much harm as the wolves did in early days.

Vulpes fulvus -

A few red foxes are said to be rarely found in these mountains but they are very scarce, which is fortunate for the wild turkeys.

Gray foxes are said to

be found in all through the mountains but not so many last year as the year before. Mr. Gillett says about fifty were taken in the valley of the Roanoke River in his vicinity in the fall of 1927. At this rate there should have been 500 in Highland County which is considered the best country in Virginia for wild turkeys, a country where Gov. Biped, Lydding, Hughee and each men go to hunt.

It is utterly impossible to maintain wild turkeys under any such conditions and foolish to attempt it.

These gray foxes are easily trapped as muskrats.

They are not cunning and can not resist a properly prepared scent. ~~but~~
~~It is often necessary~~
to catch them all out of a region before any wolves or coyotes can be caught because they insist on getting into a well scented trap before anything else can find it. Our regular coyote bait will get them every time.

These skins are valuable in winter but they should not be allowed to feed on wild turkeys all summer.

Ursus americanus

Black bears are said to be fairly common in a few places in both counties but they are not well distributed nor half appreciated as game animals. In this great forested area with abundance of acorns and nuts every year, vastly more blueberries, black berries, elderberries, black jacks, thorn apples and wild fruit and green plants and roots and bulbs which they like. They are not likely to get the habit of killing stock and if they do they are easily trapped and moved to other places where stock is scarce and other food abundant.

In Pennsylvania the black bear is considered their best

Game animal and the regular
license is charged for hunting
them. They bring many
sportsmen into the state who
would rather get a bear than
any other game at any price
and the extra revenue that
helps to pay for the fish shop
and hogs killed before a
bear that gets the habit can
be captured and novel.

On the first complaint of
bear killing stock or a warden
is sent to get him and
in half a day two men can
build and set a log bear trap
lait it with honey and generally
take the bear with them on a
truck the next day.

John J. Slaughterback of
the Game Department at Harrisburg
Pa., can send you a man to do it.

Bear ought to be well protected, not allowed to be hunted with dogs or trapped, to be taken only in a late fall short open season, the deer season generally, and neither young bear nor old females accompanied by young should be killed.

A prime bear skin has considerable value as far or more as a trophy while the meat and oil are greatly appreciated by many. There is always the spice of possible danger in killing a bear though if not cornered or wounded there is no more harmless animal in the woods.

Oregon lotus

At few seasons are found
over these two counties but
they are not very common
and evidently are too
freely hunted. They are
valuable game and fur
animals in a region
richly supplied with their
choice food, acorns,
nuts and berries and a
fair abundance about
is maintained by regular
of hunting season and bag
limit.

Mustela novatoraeensis

Weasels are not very common but probably occurs over all of both countries. They need no control beyond what gets into traps set for other fur animals each year. They do considerable good in keeping down the abundance of mice and small rodents.

Mustela vison

Mink occur along the streams and are a valuable fur market with no need of control beyond the regular trapping season. A careful record should be kept of this abundance and this can best be done by a good license system for all fur trapping and requiring a report on all animals taken.

Lutra canadensis

A few otters follow the streams but Mr. Gibbitt says he has not known one taken for 3 or 4 years back.

Mephitis mephitis nigra

Skunks are only moderately common but are probably the most common catch of the traps. A trapping license requiring a report on all animals taken would be a great help in keeping track of abundance of each species.

Spilogale

Mr. Gibbitt tells me there are a few of these little spotted skunks, called Civets,

Peromyscus truei

Mole runways and hills are seen in many places and most probably are of the hairy tailed mole although the common mole and star nosed mole should both be here.

Blarina brevicauda

Some very smooth holes in the ground suggest the short tailed shrew.

Toromys

Several species of small shrew. Certainly occur in the cold wet places but most was no collecting was done and none could be identified.

Eptesicus fuscus

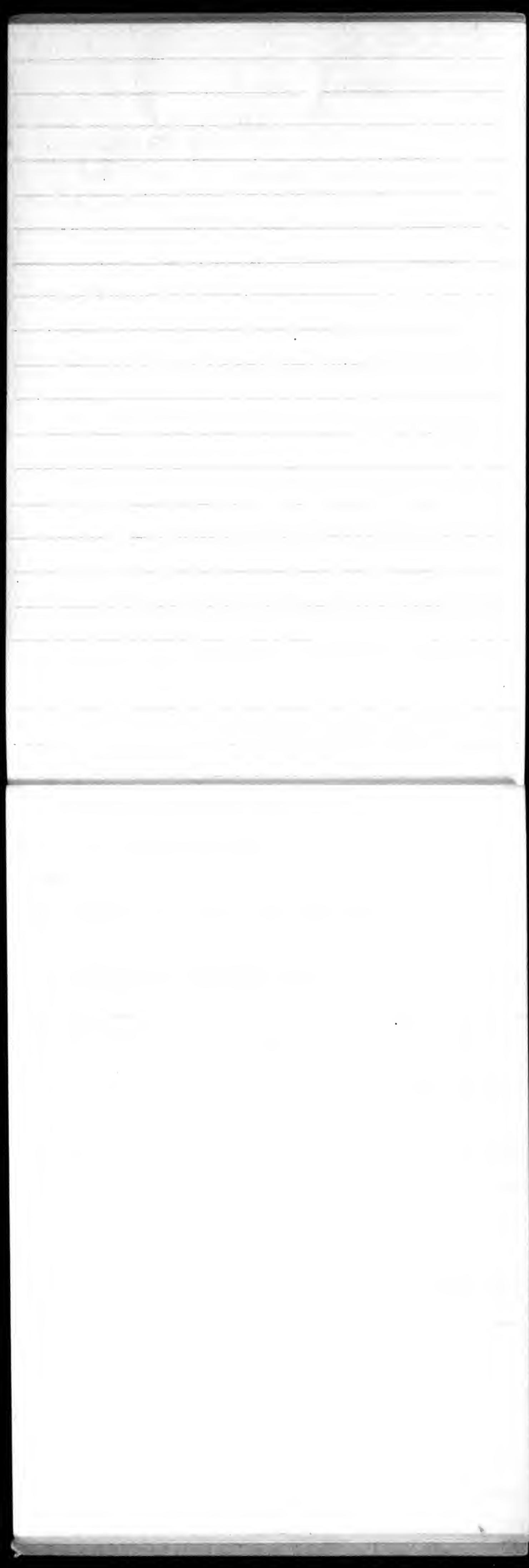
Our bat seen flying about the Warm Springs here on the evening of April 7, appeared to be this species the big brown bat but I could be positive of it.

There are many caves in these two counties and some of them are said to contain many bats.

There should be a dozen or more species here and the caves should be carefully examined as well as the bats collected in evening where seen around the water, buildings or in the woods. They are among the most valuable animals and worthy of careful study.

Didelphis virginiana

A few opossums are found and should be counted as one of the few ~~rearing~~ animals to be studied and monitored in not too great abundance. They have valuable fur and are considered by many people as a great delicacy when properly cooked. Too many such animals however would not be desirable where a good stand of ~~several~~ and grass are nesting as they are fond of meat and eggs of ~~any~~ kind



William A. White, Hard Spring, Va.

P. S. - Story 1 Buccinator, Va.
Dr. Ed. Gilbert, (Laramie, Wyo.)

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